

Jun A. Zhang
Curriculum Vita

OFFICE ADDRESS

4301 Rickenbacker Causeway
Miami, FL 33149
Email: jun.zhang@noaa.gov
Tel: (305) 361-4557

EDUCATION

Ph. D in	Rosenstiel School of Marine and atmospheric Science, University of Miami (May, 2005~December, 2007)
Applied Marine Physics	
M.S. in	Rosenstiel School of Marine and atmospheric Science, University of Miami (August, 2002~May 2005)
Applied Marine Physics	
B.S. in	Dalian University of Technology (August, 1996~July 2000)
Naval Architecture and Ocean Engineering	

PROFESSIONAL EXPERIENCE

Associate Scientist
NOAA/AOML/ Hurricane Research Division with
University of Miami/CIMAS
January, 2013- present

Assistant Scientist
NOAA/AOML/ Hurricane Research Division with
University of Miami/CIMAS
May, 2010- December 2012

Postdoctoral Fellow
National Research Council Fellow
NOAA/AOML/ Hurricane Research Division
January 2008 - April 2010
Advisers: Drs. Frank Marks and Mark Powell

Graduate Research Assistant,
Department of Applied Marine Physics, Rosenstiel School of
Marine and atmospheric Science, University of Miami
August, 2002 – December, 2007
Adviser: Prof. William Drennan

HONORS AND AWARDS

NOAA AOML Outstanding Research Paper Award (2011)
National Research Council Postdoctoral Research Associate Fellowship Award (2008-2010)
Graduate Assistant Scholarship, University of Miami/RSMAS (2003-2007)
University of Miami Fellowship Award (2002-2005)
Baogang Fellowship Award, Shanghai, China (1999-2000)
First Prize Scholarship of Dalian University of Technology (1996-1999)

PROFESSIONAL MEMBERSHIP

American Meteorological Society since 2003
American Geophysical Union since 2004

FUNDED RESEARCH PROJECTS

9. Zhang, X., A. Aksoy, and **J. A. Zhang**: Services to support the hurricane forecast improvement project. National Oceanic and Atmospheric Administration (NOAA), 10/01/2014-09/30/2015, \$1,027,950.
8. Dunion, J., A. Aksoy, **J. A. Zhang**, B. Klotz, L. Buchi, and K. Sellwood: Using NOAA unmanned aircraft systems assets to investigate tropical cyclone track, intensity change and cirrus canopy structure. National Oceanic and Atmospheric Administration (NOAA), 06/01/2014-06/31/2017, \$637,804.
7. Cione, J., **J. A. Zhang**, E. Uhlhorn, J.-W. Bao, and F. Marks: The impact of emerging observing technologies on future predictions of hurricane structure and intensity change. National Oceanic and Atmospheric Administration (NOAA), 10/01/2014-09/31/2015, \$1,272,191.
6. Foster, R. and **J. A. Zhang**: Calculating tropical cyclone inflow and boundary layer processes from ocean vector wind remote sensors. National Aeronautics and Space Administration (NASA), 09/01/2014-08/31/2018, \$655,567.
5. Zhu, P., and **J. A. Zhang**: Understanding the impact of sub-grid scale physics in HWRF on the predicted structure and intensity of tropical cyclones. National Oceanic and Atmospheric Administration (NOAA), 08/01/2014-07/31/2016, \$333,089.73.
4. **Zhang, J. A.**, A., D. S. Nolan, and H. Chen: Addressing deficiencies in forecasting rapid intensifying tropical cyclones in HWRF. National Oceanic and Atmospheric Administration (NOAA), 08/01/2014-07/31/2016, \$389,332.
3. Aksoy, A., **J. A. Zhang** and B. Klotz: Investigation of HWRF model error associated with surface-layer and boundary-layer parameterizations to improve vortex-scale, ensemble-based data assimilation using HEDAS, National Oceanic and Atmospheric Administration (NOAA), 02/01/2012-01/31/2014, \$233,436.

2. **Zhang, J. A., A.**, D. S. Nolan, and S. Lorsolo: Advanced diagnostics of the inner core structure using aircraft observations. National Oceanic and Atmospheric Administration (NOAA), 02/01/2012-01/31/2014, \$202,592.
1. Kaplan, J., J. Cione, M. DeMaria, J. Dunion, and **J. A. Zhang**: Enhancements to the SHIPS rapid intensification index. National Oceanic and Atmospheric Administration (NOAA), 07/01/2010-06/30/2012, \$92,400.

PUBLICATIONS

Peer-reviewed Journal Papers:

44. **Zhang, J. A., A.**, D. S. Nolan, R. F. Rogers, and V. Tallapragada, 2014: Evaluating the impact of improvements in the boundary layer parameterizations on hurricane intensity and structure forecasts in HWRF. *Mon. Wea. Rev.*, conditionally accepted
43. **Zhang, J. A., A.** and F. D. Marks, 2014: Sensitivity of tropical cyclone intensity and structure to horizontal diffusion in idealized three-dimensional numerical simulations. *Mon. Wea. Rev.*, conditionally accepted
42. Ming, J., **J. A. Zhang**, and R. F. Rogers, 2014: Typhoon kinematic and thermodynamic boundary layer structure from dropsonde composites. *J. Geophys. Res. – Atmos.*, conditionally accepted.
41. Wang, J., K. Young, T. Hock, D. Lauritsen, D. Behringer, M. Black, P. G. Black, J. Franklin, J. Halverson, J. Molinari, L. Nguyen, T. Reale, J. Smith, B. Sun, Q. Wang, **J. A. Zhang**, 2014: A Long-Term, High-quality, High Vertical Resolution GPS Dropsonde Dataset for Hurricane and Other Studies. *Bull. Amer. Meteor. Soc.*, in press.
40. Rogers, R., P. Reasor and **J. A. Zhang**, 2014: Multiscale structure and evolution of Hurricane Earl (2010) during rapid intensification. *Mon. Wea. Rev.*, in press.
39. Montgomery, M. T., **J. A. Zhang**, and R. K. Smith, 2014: An analysis of the observed low-level structure of rapidly intensifying and mature Hurricane Earl (2010). *Quart. J. Roy. Meteor. Soc.*, in press.
38. Nolan, D.S., **J.A. Zhang**, and E.W. Uhlhorn, 2014: On the limits of estimating the maximum wind speeds in hurricanes. *Mon. Wea. Rev.*, **142**, 2814-2837.
37. **Zhang, J. A., A.**, M. T. Montgomery, F. D. Marks, Jr., and R. K. Smith, 2014: Comments on "Symmetric and Asymmetric Structures of Hurricane Boundary Layer in Coupled Atmosphere–Wave–Ocean Models and Observations". *J. Atmos. Sci.*, **71**, 2782–2785.
36. Zhang, B., W. Perrie, **J. A. Zhang**, E. W. Uhlhorn, and Y. He, 2014: High resolution hurricane vector winds from wide swath SAR observations. *J. Atmos. Ocean. Tech.*, **31**, 272–268.

35. Ming, J., **J. A. Zhang**, R. F. Rogers, F. D. Marks, Y. Wang, and N. Cai, 2014: Multiplatform observations of boundary layer structure in the outer rainbands of landfalling typhoons. *J. Geophys. Res. – Atmos.*, 119(13):7799-7814.
34. Spund, J., **J. A. Zhang**, M. Pinsky, and A. Khain, 2014: Microphysical Structure of the Marine Atmospheric Mixed Layer under Strong Wind and Sea-Spray Formation as seen from a 2-D Explicit Microphysical Model. Part III: Height Dependent Sea-Spray Droplet Size Distribution Parameterization. *J. Atmos. Sci.*, **71**, 1914-1934.
33. Li, X., W. Zheng, X. Yang, **J. A. Zhang**, W. G. Pichel, and Z. Li, 2013: Coexistence of atmospheric gravity waves and boundary layer rolls observed by SAR. *J. Atmos. Sci.*, **70**, 3448-3459.
32. **Zhang, J. A.**, A., R. F. Rogers, P. Reasor, E. Uhlhorn, F. D. Marks, 2013: Asymmetric hurricane boundary layer structure from dropsonde composites in relation to the environmental vertical wind shear. *Mon. Wea. Rev.*, **141**, 3968-3984.
31. Byrne, D., and **J. A. Zhang**, 2013: Three- to two-dimensional turbulence transition in the hurricane boundary layer. *Geophys. Res. Lett.*, **40**, 1–4, doi:10.1002/grl.50335.
30. Cione, J. J., E. A. Kalina, and **J. A. Zhang**, 2013: Observations of air-sea interaction and intensity change in hurricanes. *Mon. Wea. Rev.*, **141**, 2368-2382.
29. Rogers, R., S. Aberson, A. Aksoy, B. Annane, M. Black, J. Cione, N. Dorst, J. Dunion, J. Gamache, S. Goldenberg, S. Gopalakrishnan, J. Kaplan, B. Klotz, S. Lorsolo, F. Marks, S. Murillo, M. Powell, P. Reasor, K. Sellwood, E. Uhlhorn, T. Vukicevic, **J. A. Zhang**, and X. Zhang, 2013: NOAA's Hurricane Intensity Forecasting Experiment (IFEX): A Progress Report. *Bull. Amer. Meteor. Soc.*, **94**, 859-882.
28. Gopalakrishnan, S. G., F. Marks, Jr, **J. A. Zhang**, X. Zhang, J. A., Bao, and V. Tallapragada, 2013: A study of the impacts of vertical diffusion on the structure and intensity of the tropical cyclones using the high resolution HWRF system. *J. Atmos. Sci.*, **70**, 524–541.
27. Li, X., **J. A. Zhang**, X. Yang, W. G. Pichel, M. DeMaria, D. Long, and Z. Li, 2013: Tropical cyclone morphology from spaceborne synthetic aperture radar. *Bull. Amer. Meteor. Soc.*, **94**, 215–230.
26. **Zhang, J. A.**, A., S. G. Gopalakrishnan, F. D. Marks, R. F. Rogers, and V. Tallapragada, 2012: A Developmental Framework for Improving Hurricane Model Physical Parameterizations Using Aircraft Observations. *Trop. Cycl. Res. Rev*, 1 (4): 419, doi: 10.6057/2012TCRR04.01.
25. **Zhang, J. A.**, A., and W. M. Drennan, 2012: An observational study of vertical eddy diffusivity in the hurricane boundary layer. *J. Atmos. Sci.*, **69**, 3223 - 3236.
24. **Zhang, J. A.**, A., and E. W. Uhlhorn, 2012: Hurricane sea-surface inflow angle and an observation-based parametric model. *Mon. Wea. Rev.*, **140**, 3587 - 3605.
23. **Zhang, J. A.**, A., and M. T. Montgomery, 2012: Observational estimates of the horizontal eddy diffusivity and mixing length in the low-level region of intense hurricanes. *J. Atmos. Sci.*, **69**, 1306-1316.

22. Spund, J., **J. A. Zhang**, M. Pinsky, and A. Khain, 2012: Microphysical structure of the marine atmospheric mixed layer under strong wind and sea spray formation as seen from a 2-D Explicit Microphysical Model. Part II: the effect of sea spray. *J. Atmos. Sci.*, **69**, 3501-3514.
21. **Zhang, J. A.**, A., P. Zhu, F. J. Masters, R. F. Rogers, and F. D. Marks, 2011: On momentum transport and dissipative heating during hurricane landfalls. *J. Atmos. Sci.*, **68**, 1397-1404.
20. **Zhang, J. A.**, A., R. F. Rogers, D. S. Nolan, and F. D. Marks, 2011: On the characteristic height scales of the hurricane boundary layer. *Mon. Wea. Rev.*, 2523-2535.
19. **Zhang, J. A.**, A., F. D. Marks, M. T. Montgomery, and S. Lorsolo, 2011: An Estimation of Turbulent Characteristics in the Low-Level Region of Intense Hurricanes Allen (1980) and Hugo (1989). *Mon. Wea. Rev.*, **139**, 1447-1462.
18. Zhu, P., **J. A. Zhang**, F. J. Masters, 2010: Wavelet analysis of turbulence under hurricane landfalls. *J. Atmos. Sci.*, **67**, 3793-3805.
17. Haus, B., D. Jeong, M. A. Donelan, **J. A. Zhang**, and I. Savelyev, 2010: The relative rates of air-sea heat transfer and frictional drag in very high winds. *Geophys. Res. Lett.*, **37**, doi:10.1029/2009GL042206.
16. Lorsolo, S., **J. A. Zhang**, F. D. Marks, and J. Gamache, 2010: Estimation and mapping of hurricane turbulent energy using airborne Doppler measurements. *Mon. Wea. Rev.*, **138**, 3656-3670.
15. **Zhang, J. A.**, A., 2010: Estimation of dissipative heating using low-level in-situ aircraft observations in the hurricane boundary layer. *J. Atmos. Sci.*, **67**, 1853-1862.
14. **Zhang, J. A.**, A., 2010: Spectra characteristics of turbulence in the hurricane boundary layer. *Quart. J. Roy. Meteor. Soc.*, DOI:10.1002/qj.610.
13. Nolan, S. D., **J. A. Zhang** and D. P. Stern, 2009: Validation and comparisons of planetary boundary layer parameterizations in Tropical Cyclones by Comparison of in-situ observations and high-resolution simulations of hurricane Isabel (2003). Part I: Initialization, track and intensity, and the outer core boundary layer. *Mon. Wea. Rev.*, **137**, 3651–3674.
12. Nolan, S. D., D. P. Stern, and **J. A. Zhang**, 2009: Validation and comparisons of planetary boundary layer parameterizations in Tropical Cyclones by Comparison of in-situ observations and high-resolution simulations of hurricane Isabel (2003). Part II: Inner core boundary layer and eyewall structure. *Mon. Wea. Rev.*, **137**, 3675–3698.
11. **Zhang, J. A.**, A., W. M. Drennan, P. G. Black, and J. R. French, 2009: Turbulence structure of the hurricane boundary layer between the outer rain bands. *J. Atmos. Sci.*, **66**, 2455-2467.

10. **Zhang, J. A.,** A., P. G. Black, J. R. French, and W. M. Drennan, 2008: First direct measurements of enthalpy flux in the hurricane boundary layer: The CBLAST results. *Geophys. Res. Lett.* , 35(11):L14813, doi:10.1029/2008GL034374.
9. **Zhang, J. A.,** A., K. B. Katsaros, P. G. Black, S. Lehner, J. R. French, and W. M. Drennan, 2008: Effects of roll vortices on turbulent fluxes in the hurricane boundary layer. *Boundary-Layer Meteorol.*, 128(2), 173-189.
8. Black, P. G., E. A. D'Asaro, W. M. Drennan, J. R. French, P. P. Niiler, T. B. Sanford, E. J. Terrill, E. J. Walsh, and **J. A. Zhang**, 2007: Air-Sea Exchange in Hurricanes: Synthesis of Observations from the Coupled Boundary Layer Air-Sea Transfer Experiment, *Bull. Amer. Meteor. Soc.*, **88**, 357-374.
7. Drennan, W. M., **J. A. Zhang, J. A.,** R. French, and P. G. Black, 2007: Turbulent Fluxes in the Hurricane Boundary Layer, II. Latent Heat Flux, *J. Atmos. Sci.*, **64**, 1103-1115.
6. French, J. R., W. M. Drennan, **J. A. Zhang**, and P. G. Black, 2007: Turbulent Fluxes in the Hurricane Boundary Layer, I. Momentum Flux, *J. Atmos. Sci.*, **64**, 1089-1102.
5. Wang, J., Y. Liu, Z. Ji, Y. Deng, P. Guo, S. Jin, and **J. Zhang**, 2006: A Comprehensive Line-Heating Process for Automatic Formation of Double-Curved plates. *Selected Papers of Chin. Soc. Naval Architect. Marine Engin., Shipbuild. China*, 17, 180—189.
4. Wang, J., Y. Liu, Z. Ji, Y. Deng, and **J. Zhang**, 2006: Efficient Algorithms for Inspection and Reforming of Double-curved Plate in Line Heating process. *J. Ship Prod.*, **22**, 184-193(10).
3. Wang, J., Y. Liu, Z. Ji, Y. Deng, and **J. Zhang**, 2006: Study on Forced Convection Boundary Condition for Subcooled Water in the Simulation of Line-Heating Process. *J. Ship Prod.*, **22**, 41-47.
2. Wang, J., Y. Liu, Z. Ji, Y. Deng, and **J. Zhang**, 2006: Forced convection boundary condition for subcooled water in the simulation of line heating process. *J. Harbin Engin. Univ.*, **27(2)**, 166-171.
1. Liu Y., T. Chen, **J. Zhang**, and Y. Deng, 2004: Mathematical Models for Dead Load Forming of Hull Saddle Shaped Steel Plates. *Shipbuild. China*, **45**, 73-80.

Thesis and Dissertation:

Zhang, J. A., 2005: Humidity Flux Measurements in Hurricane Conditions, *Master Thesis*, University of Miami. Adviser: Prof. William Drennan

Zhang, J. A., 2007: An Airborne Investigation of the Atmospheric Boundary Layer Structure in the Hurricane Force Wind Regime, *Doctoral Dissertation*, University of Miami. Adviser: Prof. William Drennan

Presentations and Posters:

82. Shpund, J., A. Khain and **J. A. Zhang**, 2014: Ascent of sea spray in the hurricane boundary layer in the presence of strong rain. July, proceedings at the 14th conference on cloud physics, Boston, MA.
81. Rogers, R. F., P. D. Reasor, **J. A. Zhang**, and S. Guimond, 2014: Aircraft observations of the multiscale structure and evolution of rapidly intensifying tropical cyclones. 30 April, HS3 Science and Development Preparation Meeting, Moffett Field, CA.
80. Byrne, D., and **J. A. Zhang**, 2014: Observed 3D to 2D energy cascade in hurricanes. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
79. Rogers, R. F., P. D. Reasor, and **J. A. Zhang**, 2014: Multiple Structure and Evolution of Earl (2010) during Rapid Intensification. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
78. Li, X., Z. Zhao, B. Liu, **J. A. Zhang**, X. Yang, W. Pichel, and M. DeMaria, 2014: Analysis of hurricane morphology, internal waves and boundary layer rolls observed from satellite SAR images. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
77. Aksoy, A. B. W. Klotz, **J. A. Zhang**, E. Uhlhorn, and J. J. Cione, 2014: Model sensitivity to perturbations of Environment, structure, and model parameters in idealized ocean-coupled tropical cyclone simulations. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
76. Nolan, S. D., **J. A. Zhang**, and E. W. Uhlhorn, 2014: On the limits of measuring the maximum wind speeds in hurricanes. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
75. **Zhang, J. A.**, A., R. Rogers, P. Reasor, E. Uhlhorn, and F. Marks, 2014: Dropsonde composites of asymmetric hurricane boundary layer structure in relation to environmental vertical wind shear. Proceedings at the 31th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
74. **Zhang, J. A.**, 2013: Turbulent flux observations in the hurricane boundary layer and applications to hurricane models. Invited talk at the Institute of Tropical and Marine Meteorology, 30, October, Guangzhou, China.
73. **Zhang, J. A.**, 2013: A parametric model of hurricane sea-surface inflow angle based on aircraft observations. Invited talk at State Key Laboratory of Tropical Oceanography, South China Sea Institute of Oceanography, 31, October, Guangzhou, China.
72. **Zhang, J. A.**, 2013: A developmental framework for improving hurricane model physics using aircraft observations. Invited talk at Nanjing University, 1, November, Nanjing, China.
71. **Zhang, J. A.**, 2013: Improving hurricane model physics using aircraft observations. Invited talk at Shanghai Typhoon Institute, 1, November, Shanghai, China.
70. **Zhang, J. A.**, 2013: Diagnostics and comparisons of hurricane intensity and structure using idealized HWRF simulations with GFS and MYJ PBL schemes. Invited talk at Environmental Modeling Center HWRF modeling Meeting. 24 October, College Park, Maryland.
69. **Zhang, J. A.**, 2013: A developmental framework for improving hurricane model

- physics using aircraft observations. Invited talk at Florida International University, 11, October, Miami, FL.
68. Byrne, D., and **J. A. Zhang**, 2013: Three- to two-dimensional turbulence transition in the hurricane boundary layer. EGU General Assembly, April, Vienna, Austria.
 67. Kwon, Y., K., V. Tallapragada, W. Wang and **J. A. Zhang**, 2013: Proposed 2013 PBL upgrade to the operational HWRF. EMC's HWRF internal meeting.
 66. Kwon, Y., K. Chanh, W. Wang, S. Trahan, Q. Liu, Z. Zhang, V. Tallapragada, and **J. A. Zhang**, 2013: Potential Upgrades for the Radiation and Boundary Layer Physics in the Operational WRF Model. Preprints at the 67th Interdepartmental Hurricane Conference Tropical Cyclone Research Forum, 5 March, College Park, Maryland.
 65. **Zhang, J. A.**, 2012: Investigation of hurricane wind and structure by SAR. SSR Science Team meeting, 25 October, College Park, Maryland.
 64. Li, X., **J. A. Zhang**, X. Yang, W. G. Pichel, M. DeMaria, D. Long, and Z. Li, 2012: Ocean surface response to hurricanes observed by SAR. Geosicen and Remote Sensing Symposium (IGARSS), IEEE International, July, Munich, Germany.
 63. **Zhang, J. A.**, 2012: Evaluation and Improvement of HWRF PBL physcis using aircraft observations. Invited talk at HFIP Regional Modeling Physics Workshop, 18, September, Colleage Park, Maryland.
 62. **Zhang, J. A.**, 2012: Improving the HWRF model physics using observations and model diagnostics. Invited talk at the NOAA Hurricane Forecast Impromtent Project monthly Teleconference, 25 April, Miami, FL.
 61. **Zhang, J. A.**, 2012: Update on observed eddy diffusivity for improving HWRF model physics. Invited talk at the HWRF internal meeting at EMC, 22 May.
 60. Bao, J.-W., S. A. Michelson, S. G. Gopalakrishnan, F. Marks, **J. A. Zhang**, and V. Tallapragada, 2012: Comparison and evaluation of two ABL mixing schemes in HWRF. Proceeding at the 66th Interdepartmental Hurricane Conference, 5 March, Atlanta, GA.
 59. Mongomery, M. T., N. T. Sanger, **J. A. Zhang**, R. K. Smith, and M. M. Bell, 2012: An observational study of the dynamical spin-up probess of Typhoon Jangmi (2008) and Hurricane Earl (2010). 31 May, NASA GRIP science meeting, Wallops Island, VA.
 58. Uhlhorn, E. W., and **J. A. Zhang**, 2012: Friction Residual of the Near-Surface Momentum Budget at the Eyewall: Role of the Radial Momentum Transport. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 57. Zhang, J. A., A., R. F. Rogers, P. D. Reasor, J. J. Cione, and E. W. Uhlhorn, 2012: On the low-level inner-core structure in relation to the environmental vertical wind shear. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 56. Zhang, J. A., A., and E. Uhlhorn, 2012: Hurricane sea-surface inflow angle and an observation-based parametric model of the two-dimensional wind field. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 55. Klotz, B. W., E. W. Uhlhorn, **J. A. Zhang**, and M. Fischer, 2012: Examining Surface Momentum Balance and Boundary Layer Conditions in Extreme Tropical Cyclones. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 54. **Zhang, J. A.**, M. T. Montgomery, F. D. Marks Jr., and S. Lorsolo, 2012:

- Observational estimates of turbulence characteristics in the low-level troposphere of intense hurricanes. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
53. Uhlhorn, E., M. Fischer, B. W. Klotz, and **J. A. Zhang**, 2012: Dynamical Boundary-Layer Depths in Hurricanes Derived from Surface Wind Observations. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 52. Rogers, R., P. Reasor, S. Lorsolo, and **J. A. Zhang**, 2012: Observations of the Inner-Core Structure of Rapidly Intensifying Tropical Cyclones. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 51. Gruskin, Z., G. J. Tripoli, W. E. Lewis, **J. A. Zhang**, and F. D. Marks Jr., 2012: Helical convective vortices in the hurricane boundary layer simulated with the University of Wisconsin Nonhydrostatic Modeling System (UW-NMS). Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 50. Furst, J., P. Zhu and **J. A. Zhang**, 2012: Characterizing momentum transport, dissipative heating, and turbulence structure in the surface layer of landfalling hurricanes using high resolution tower observations. Proceedings at the 30th Conference on Hurricanes and Tropical Meteorology, Pone Vedra Beach, FL.
 49. **Zhang, J. A.**, 2012: Improving boundary layer physics in hurricane models based on observations. Invited talk at AIR Worldwide, March, Boston, MA.
 48. **Zhang, J. A.**, 2011: On hurricane boundary layer parameterizations: Lessons learned from observations. Invited talk at the NOAA Hurricane Forecast Improvement Project Physics Workshop, 9 August, 2011, Clinton, MD.
 47. **Zhang, J. A.**, 2011: Probing the hurricane boundary layer using NOAA's research aircraft. Invited talk at NCAR, June 2, 2011, Boulder, CO.
 46. Rogers, R., P. Reasor, S. Lorsolo, and **J. A. Zhang**, 2011: Vortex- and convective-scale evolution during the rapid intensification of Hurricane Earl (2010). NASA GRIP science meeting, 7 June, 2011, Los Angeles, CA.
 45. **Zhang, J. A.**, 2011: Flight-level data from the NOAA WP-3D aircraft: An overview of the instrumentation and errors. Invited talk at the NOAA Hurricane Forecast Improvement Project Physics Workshop, 11 May, 2011, Miami, FL.
 44. **Zhang, J. A.**, R. Rogers, D. S. Nolan, and F. D. Marks, 2011: On the characteristics of the hurricane boundary layer, for model evaluation purpose. Proceedings at the 65th Interdepartmental Hurricane Conference, February 23-March 3, 2011, Miami, FL.
 43. Rogers, R., P. Reasor, S. Lorsolo, and **J. A. Zhang**, 2011: Tropical cyclone inner-core diagnostics. Proceedings at the 65th Interdepartmental Hurricane Conference, February 23-March 3, 2011, Miami, FL.
 42. Kaplan, J., J. J. Cione, M. DeMaria, J. Knaff, J. Dunion, J. F. Dostalek, J. E. Solbrig, J. Hawkins, T. F. Lee, E. Kalina, **J. A. Zhang, J. A.**, Dostalek, and P. Leighton, 2011: Enhancements to the SHIPS rapid intensification index. Proceedings at the 65th Interdepartmental Hurricane Conference, February 23-March 3, 2011, Miami, FL.
 41. **Zhang, J. A.**, F. D. Marks, M. T. Montgomery, and S. Lorsolo, 2010: Estimation of turbulent characteristics in the low-level eyewall and outer-core regions in intense Hurricanes Allen (1980) and Hugo (1989). Proceedings at the AGU Fall meeting, San Francisco, CA.
 40. Aksoy, A., T. Vukicevic, K. J. Sellwood, S. Lorsolo, S. G. Gopalakrishnan, **J. A.**

- Zhang**, S. Aberson, and F.Zhang, 2010: Vortex-scale hurricane data assimilation: OSSE results with airborne Doppler radar and dropsondes using NOAA/AOML/HRD's HWRF Ensemble Data Assimilation System (HEDAS) The 4th Ensemble Kalman Filter Workshop, April 2010, Albany, New York.
39. Kaplan, J., J. J. Cione, M. DeMaria, J. Knaff, J. Dunion, J. F. Dostalek, J. E. Solbrig, J. Hawkins, T. F. Lee, **J. A. Zhang**, E. Kalina, and P. Leighton, 2010: Enhancements of the operational SHIPS rapid intensification index. Proceedings at 64th Interdepartmental Hurricane Conference, March, Savannah, Georgia.
38. **Zhang, J. A.**, J. Stamat, S. Cummings, S. Kimball, and F. Marks, 2010: Shallow water wave measurements in the hurricane environment. Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
37. **Zhang, J. A.**, A. Aksoy, S. Lorsolo, R. Rogers, E. Uhlhorn, J. J. Cione, J. Dunion, J. Kaplan, K. Yeh, X. Zhang, S. G. Gopalakrishnan, T. Quirino, J. Cangialosi, and F. Marks, 2010: An observational and numerical study of the boundary layer processes during the intensification of Hurricane Bill (2009). Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tuscon, AZ.
36. Kaplan, J., **J. A. Zhang**, S. Aberson, M. L. Black, E. Uhlhorn, J. Dunion, A. Aksoy, and R. Rogers, 2010: A multi-scale analysis of the rapid intensification of Hurricane Paloma (2008). Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
35. Kaplan, J., J. J. Cione, M. DeMaria, J. Knaff, J. Dunion, J. F. Dostalek, J. E. Solbrig, J. Hawkins, T. F. Lee, **J. A. Zhang**, E. Kalina, and P. Leighton, 2010: Enhancements to the operational SHIPS rapid intensification index. Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
34. Lorsolo, S., J. F. Gamache, F. Marks, P. Dodge, **J. A. Zhang**, 2010: Retrieval of hurricane turbulence parameters using airborne Doppler radar measurements. Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
33. Cione, J. J., **J. A. Zhang** and E. W. Uhlhorn, 2010: Near-surface temperature and moisture observations from tropical cyclones between 1975 and 2007: Axisymmetric and asymmetric structural analysis. Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ.
32. Zhu, P., **J. A. Zhang** and F. Masters, 2010: Wavelet analyses of turbulence in the hurricane boundary layer during landfalls. Proceedings at the 29th Conference on Hurricanes and Tropical Meteorology, Tuscon, AZ.
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